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PRELIMINARY ASSESSMENT/ VISUAL SITE INSPECTION

AC ROCHESTER, DAVISON ENGINEERING FLINT, MICHIGAN MID 980 568 620

FINAL REPORT

Prepared for

U.S. ENVIRONMENTAL PROTECTION AGENCY
Office of Waste Programs Enforcement
Washington, DC 20460

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EXECUTIVE SUMMARY

PRC Environmental Management, Inc. (PRC), performed a preliminary assessment and visual site inspection (PA/VSI) to identify and assess the existence and likelihood of releases from solid waste management units (SWMU) and other areas of concern (AOC) at the AC Rochester (ACR) Davison Engineering Complex (Davison) facility in Flint, Michigan. This summary highlights the results of the PA/VSI and the potential for releases of hazardous wastes or hazardous constituents from SWMUs and AOCs identified.

The Davison facility is an engineering research and testing facility for automotive components manufactured at other ACR facilities. The Davison facility includes a powerhouse that generates steam. The facility generates and manages the following waste streams: waste fuels (D001); waste oil contaminated with benzene (D018); paint wastes (D001); laboratory packs (D001, D002, D003, D005, D006, P022, U019, and U044); mercury waste (U151); waste glycol; flyash; and general refuse.

The Davison facility has operated at its current location since 1960. The facility occupies about 80 acres in a commercial and residential area, and it employs about 1,100 people. While the facility is undergoing closure, it operates as a large-quantity generator of hazardous waste and is regulated as a treatment, storage, or disposal facility.

In 1925, General Motors (GM) purchased the facility property from Dort Highway Motor Company. GM constructed the powerhouse in 1952; GM's AC Spark Plug Division constructed the Davison Engineering complex in 1960. The ACR Division was formed in 1988, when GM consolidated the AC Spark Plug and Rochester Products Divisions. In 1990, ACR became a division of GM's Delco Electronics. The 488-acre ACR complex consists of several facilities operating under separate U.S. Environmental Protection Agency (EPA) Identification (ID) Nos.: the Davison Engineering Complex, EPA ID No. MID 980 568 620; the Dort Highway complex, EPA ID No. MID 005 356 647; the ACR wastewater treatment plant, EPA ID No. MID 980 568 570; and the Averill Avenue complex, EPA ID No. MID 980 568 745.

The Davison facility has administratively closed two waste oil tanks and is undergoing closure of a hazardous waste storage pad and a waste fuel tank. The waste fuel tank is located in a fuel tank farm that is undergoing remediation activities.

The PA/VSI identified the following 13 SWMUs and one AOC at the facility:

Solid Waste Management Units

1. Waste Fuel Tank No. 12
2. Waste Fuel Tank No. 23
3. Former Waste Fuel Tank
4. Waste Oil Tank No. 5024
5. Former Waste Oil Tank
6. Mobile Oil-Changing Carts
7. Hazardous Waste Storage Building
8. Former Hazardous Waste Storage Building
9. Powerhouse Flyash Hopper
10. Waste Glycol Satellite Accumulation Area
11. Laboratory Waste Satellite Accumulation Areas
12. Containerized Soil and Water
13. Tank Bottom Drum

Area of Concern

1. Former Fuel Tank Farm

Releases to ground water occurred at the facility between 1983 and 1986. During this period, corroded underground storage tanks in the Former Fuel Tank Farm (AOC 1) released an unknown amount of benzene and gasoline to subsurface soils and ground water. To contain the ground-water plume, the facility currently pumps ground water from the former tank farm to the wastewater treatment plant. The wastewater treatment plant operates under EPA ID No. MID 980 568 570. In March 1984, ACR hired Neyer, Tiseo & Hindo, Ltd., to study the extent of contamination and propose remediation options. At the time of the VSI, the tanks were empty and ready for excavation.

The nearest surface water body is Gilkey Creek, located about 750 feet south of the facility. A release to the creek occurred in 1992, when approximately 177 gallons of gasoline overflowed from a new tank farm and flowed into a facility storm water sewer system. The facility sewer system is connected to the City of Flint storm water sewer system, which empties directly into Gilkey Creek which flows into the Flint River. The release to Gilkey Creek was cleaned up by the facility within 24 hours.

The potential is moderate for future releases from the facility to surface water. A release could occur from drums of fuel-contaminated wastewater (SWMU 12). The wastewater was generated from remedial activities at the Former Fuel Tank Farm (AOC 1). At the time of the VSI, some drums were bulging and one had a ruptured lid. The drums were stored on pallets on an asphalt parking lot. If the drums released wastewater, it could flow to facility storm sewers to Gilkey Creek, and ultimately to the Flint River.

No documented releases to air have occurred at the facility. A low to moderate potential for a release to the air exists at the powerhouse. Flyash could become airborne when it is transferred from the Powerhouse Flyash Hopper (SWMU 9) to an open dumptruck. Flyash could then migrate via the wind to on-site and adjacent property soils.

A release to on-site subsurface soils has occurred at the facility. Between 1983 and 1986, corroded underground storage tanks in the Former Fuel Tank Farm (AOC 1) released an unknown amount of benzene and gasoline to the subsurface soils and ground water. These soils will be cleaned up in conjunction with the planned ground-water remediation. A moderate potential exists for future releases to on-site soils, because containerized soil and water (SWMU 12) could potentially spill from the bulging and ruptured drums.

Ground water is used for commercial and industrial use in the vicinity of the facility. The City of Flint purchases potable water for the City from Detroit. Detroit obtains its water from Lake Huron, approximately 60 miles east of Flint.

PRC recommends ACR proceed with planned closure activities and soil and ground-water remediation. In addition, the containerized soil and water (SWMU 12) should be disposed of as soon as possible.

1.0 INTRODUCTION

PRC Environmental Management, Inc. (PRC), received Work Assignment No. R05032 from the U.S. Environmental Protection Agency (EPA) under Contract No. 68-W9-0006 (TES 9) to conduct preliminary assessments (PA) and visual site inspections (VSI) of hazardous waste treatment and storage facilities in Region 5.

As part of the EPA Region 5 Environmental Priorities Initiative, the RCRA and CERCLA programs are working together to identify and address RCRA facilities that have a high priority for corrective action using applicable RCRA and CERCLA authorities. The PA/VSI is the first step in the process of prioritizing facilities for corrective action. Through the PA/VSI process, enough information is obtained to characterize a facility's actual or potential releases to the environment from solid waste management units (SWMU) and areas of concern (AOC).

A SWMU is defined as any discernible unit at a RCRA facility in which solid wastes have been placed and from which hazardous constituents might migrate, regardless of whether the unit was intended to manage solid or hazardous waste.

The SWMU definition includes the following:

- RCRA-regulated units, such as container storage areas, tanks, surface impoundments, waste piles, land treatment units, landfills, incinerators, and underground injection wells
- Closed and abandoned units
- Recycling units, wastewater treatment units, and other units that EPA has generally exempted from standards applicable to hazardous waste management units
- Areas contaminated by routine and systematic releases of wastes or hazardous constituents. Such areas might include a wood preservative drippage area, a loading-unloading area, or an area where solvent used to wash large parts has continually dripped onto soils.

An AOC is defined as any area where a release to the environment of hazardous waste or constituents has occurred or is suspected to have occurred on a nonroutine and nonsystematic basis. This includes any area where such a release in the future is judged to be a strong possibility.

The purpose of the PA is as follows:

- Identify SWMUs and AOCs at the facility
- Obtain information on the operational history of the facility
- Obtain information on releases from any units at the facility
- Identify data gaps and other informational needs to be filled during the VSI

The PA generally includes review of all relevant documents and files located at state offices and at the EPA Region 5 office in Chicago.

The purpose of the VSI is as follows:

- Identify SWMUs and AOCs not discovered during the PA
- Identify releases not discovered during the PA
- Provide a specific description of the environmental setting
- Provide information on release pathways and the potential for releases to each medium
- Confirm information obtained during the PA regarding operations, SWMUs, AOCs, and releases

The VSI includes interviewing appropriate facility staff, inspecting the entire facility to identify all SWMUs and AOCs, photographing all visible SWMUs, identifying evidence of releases, initially identifying potential sampling parameters and locations, if needed, and obtaining all information necessary to complete the PA/VSI report.

This report documents the results of a PA/VSI of the AC Rochester (ACR) Davison Engineering Complex (Davison) facility in Flint, Michigan. The PA was completed on March 10, 1992. PRC gathered and reviewed information from the Michigan Department of Natural Resources (MDNR), U.S. Department of Agriculture (USDA), U.S. Department of Commerce (USDC), U.S. Geological Survey (USGS), Michigan Department of Public Health (MDPH), and from EPA Region 5 RCRA files. The VSI was conducted on March 26, 1992. It included interviews with Davison facility representatives and a walk-through inspection of the facility. Thirteen SWMUs and one AOC were identified at the facility.

The VSI is summarized and 13 inspection photographs are included in Attachment A. Field notes from the VSI are included in Attachment B.

2.0 FACILITY DESCRIPTION

This section describes the facility's location, past and present operations (including waste management practices), waste generating processes, history of documented releases, regulatory history, environmental setting, and receptors.

2.1 FACILITY LOCATION

The ACR Davison facility is located at 1601 North Averill Avenue on the east side of Flint, in Genesee County, Michigan, (latitude 43° 01' 46" N and longitude 83° 38' 50" W), as shown in Figure 1. The facility occupies about 80 acres in a mixed commercial and residential area. The facility consists of the Davison Engineering Complex and the ACR plant powerhouse.

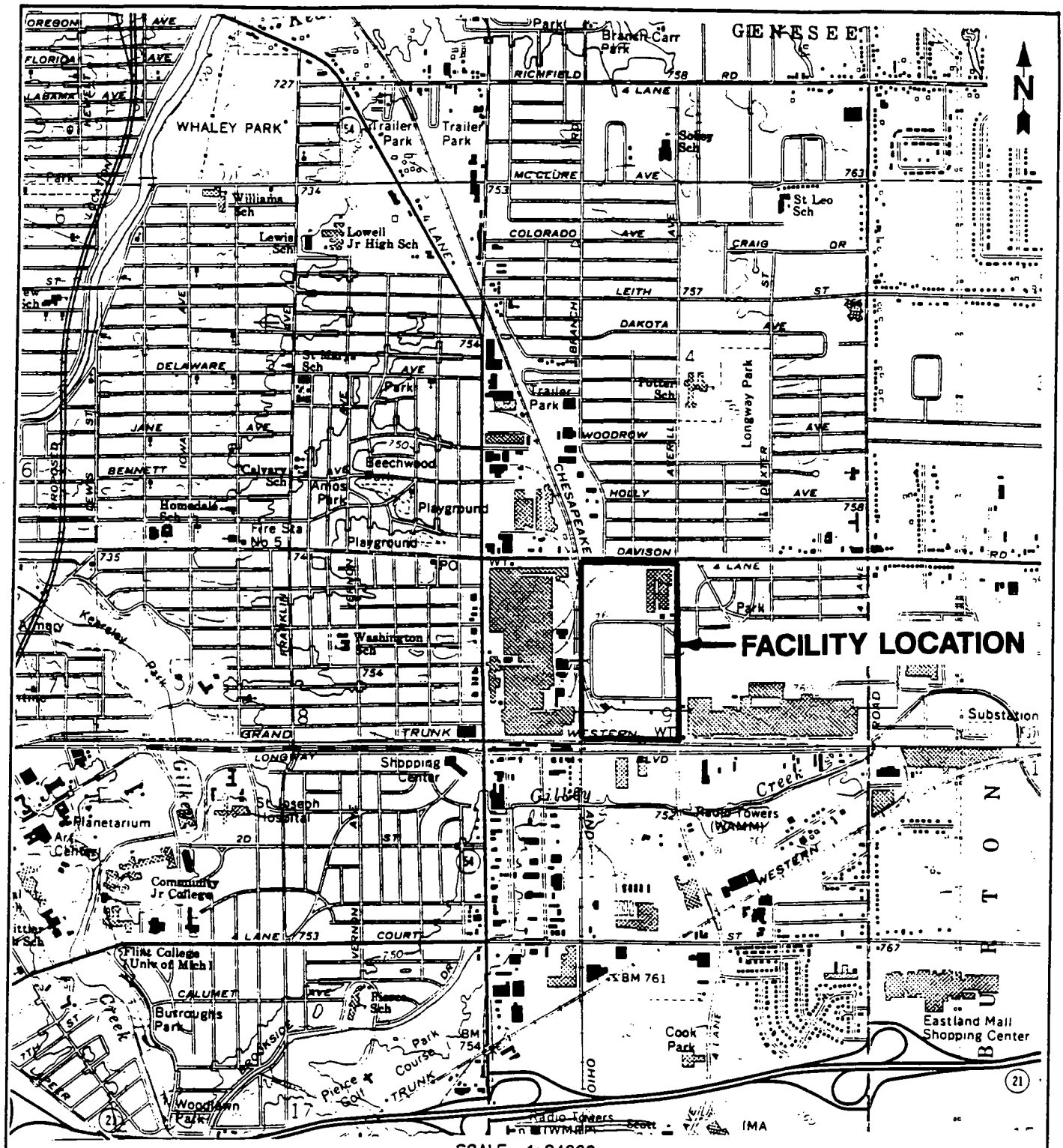
The ACR Davison facility is bordered on the north by Davison Road and a residential area, on the west by the Chesapeake and Ohio Railroad and the ACR Dort Highway Complex [EPA Identification (ID) No. MID 005 356 647], on the south by Longway Boulevard and a commercial area, and on the east by the ACR Averill Avenue Complex (EPA ID No. MID 980 568 745) and a residential area.

2.2 FACILITY OPERATIONS

In 1925, General Motors (GM) purchased the facility property from the Dort Highway Motor Company. No operations occurred on the property until GM constructed the powerhouse in 1952; GM's AC Spark Plug Division constructed the Davison Engineering complex in 1960. The ACR Division was formed in 1988, when GM consolidated the AC Spark Plug and Rochester Products Divisions. In 1990, ACR became a division of GM's Delco Electronics.

The ACR Complex consists of four facilities covering about 488 acres. The four facilities operate under the following EPA ID numbers: the Dort Highway Complex, MID 005 356 647; the waste water treatment plant, MID 980 568 570; the Averill Avenue Complex, MID 980 568 745; and the Davison Engineering Complex, MID 980 568 620. This PA/VSI report discusses the Davison Engineering Complex.

The Davison facility is comprised of the Davison Engineering Complex (complex) and the ACR Power House (powerhouse). The complex was completed in 1960 and expanded in 1962, 1972, 1975, and 1979. It now occupies approximately 406,000 square feet. The facility operates an engineering testing and research facility for various automotive components produced at other ACR manufacturing facilities. The complex consists of offices, an experimental model shop,



AC ROCHESTER – DAVISON ENGINEERING
FLINT, MICHIGAN

FIGURE 1

FACILITY LOCATION

PRC ENVIRONMENTAL MANAGEMENT, INC.

SOURCE: MODIFIED FROM USGS, 1975

engineering and materials testing facilities and laboratories, and a testing garage. Activities at the complex include machining, grinding, plastics molding, painting, and vehicle and engine testing. No manufacturing processes take place at the facility. Approximately 1,100 people are employed at the complex.

The powerhouse was built in 1952 and expanded in 1967. It is located at the southern end of the Davison facility. Five coal-fired boilers and one natural gas boiler generate steam for all of ACR's operations. The powerhouse employs approximately 20 people.

Except for wastes generated in the powerhouse, wastes currently generated are associated with operating and maintaining engines, vehicles, laboratories, and model shops. Waste management consists of storing hazardous waste oils and waste fuels in aboveground and underground tanks (SWMUs 1, 2, and 3) and storing hazardous wastes in 55-gallon drums in the Hazardous Waste Storage Building (SWMU 7). Powerhouse wastes are stored in the Powerhouse Flyash Hopper (SWMU 9). All facility SWMUs are identified in Table 1. The facility layout, including SWMUs and the AOC, is included as Figure 2.

2.3 WASTE GENERATING PROCESSES

The Davison facility is an engineering testing and research facility for various automotive components produced at other ACR manufacturing facilities. Primary waste streams generated at the Davison facility include paint wastes (D001); laboratory packs (D001, D002, D003, D005, D006, P022, U019, U044); waste oil (D008, D018); waste fuels (D001); mercury (U151); waste glycol; flyash; and general refuse. Except for wastes generated at the powerhouse, wastes are routinely generated from research on and testing of automotive components, engines, and vehicles, in the facility's laboratories and model shops. The powerhouse generates coal flyash waste from boilers that produce steam for all of ACR's Flint operations. In addition, non-routine wastes are generated from closure activities and contaminated ground-water investigations. Wastes generated at the facility are discussed below and are summarized in Table 2. Annual generation rates presented are based on 1991 waste generation data.

Research activities include building prototype products and conducting chemical, metallurgical, and materials analyses. Approximately 900 pounds of paint wastes (D001) are generated annually, mostly from building prototypes. This waste is stored in 55-gallon drums in the Hazardous Waste Storage Building (SWMU 7) for less than 90 days. Petro-Chem Processing, Inc., of Detroit, Michigan, transports the wastes off site and treats the wastes at their facility by blending them into liquid or solid fuels for cement kilns.

TABLE 1

SOLID WASTE MANAGEMENT UNITS (SWMU)

SWMU Number	SWMU Name	RCRA Hazardous Waste Management Unit*	Status
1	Waste Fuel Tank No. 12	No	Active, storage of waste fuels for less than 90 days
2	Waste Fuel Tank No. 23	No	Active, storage of waste fuels for less than 90 days
3	Former Waste Fuel Tank	Yes	Inactive, to be closed in 1992
4	Waste Oil Tank No. 5024	No	Active, storage of waste oil for less than 90 days
5	Former Waste Oil Tank	No	Inactive, administratively closed 1986
6	Mobile Oil-Changing Carts	No	Active, storage of waste oil
7	Hazardous Waste Storage Building	No	Active, storage of hazardous wastes for less than 90 days
8	Former Hazardous Waste Storage Building	Yes	Inactive, to be closed in 1992
9	Powerhouse Flyash Hopper	No	Active, does not manage hazardous waste
10	Waste Glycol Satellite Accumulation Area	No	Active, less than 90-day storage of waste
11	Laboratory Waste Satellite Accumulation Areas	No	Active, less than 90-day storage of hazardous waste
12	Containerized Soil and Water	No	Active, awaiting final disposal
13	Tank Bottom Drum	No	Active, awaiting final disposal

Note:

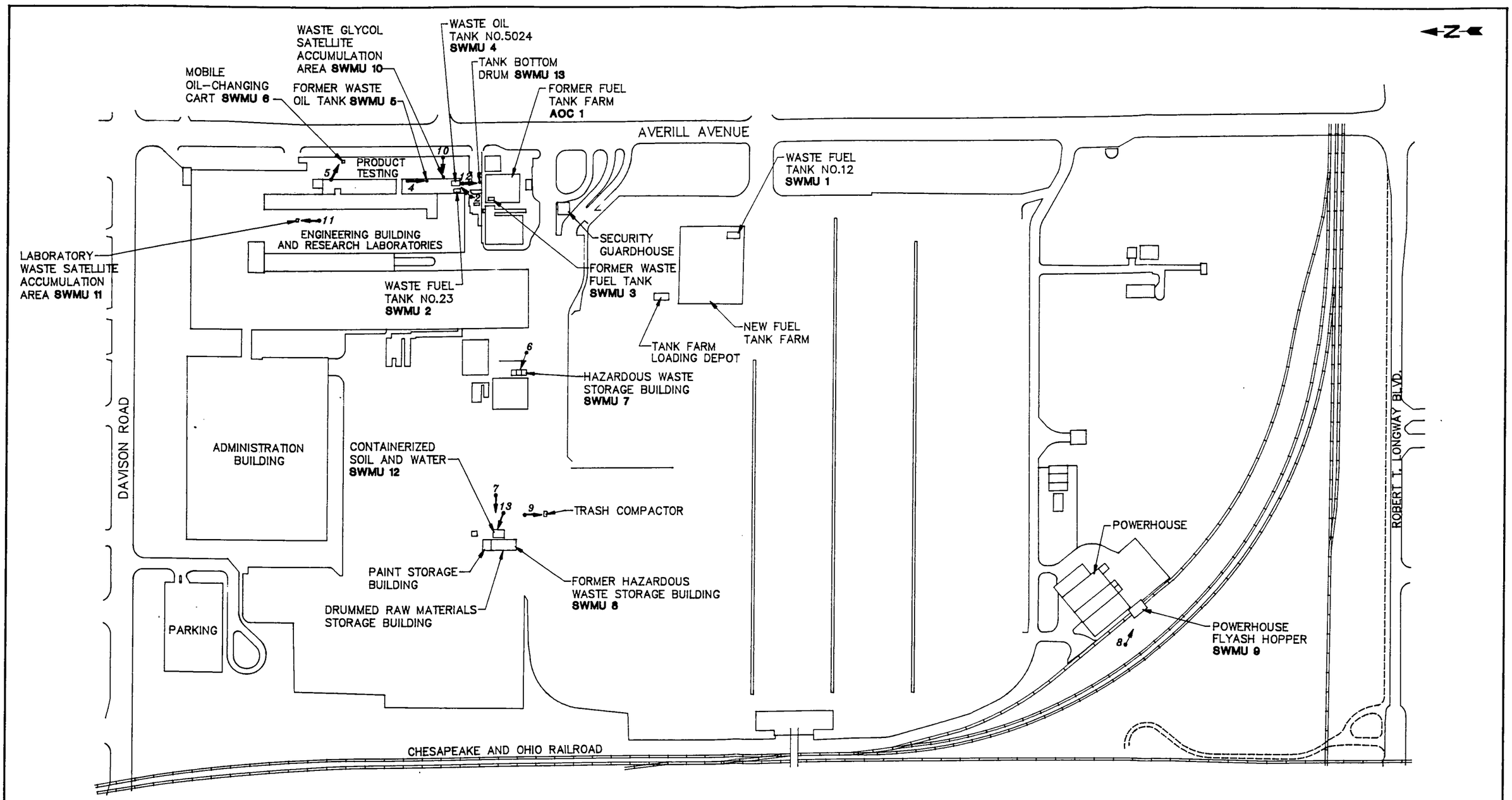
* A RCRA hazardous waste management unit is one that currently requires or formerly required submittal of a RCRA Part A or Part B permit application.

TABLE 2
SOLID WASTES

Waste/EPA Waste Code	Source	Primary Management Unit*
Paint wastes/D001	Research and testing facilities	7, 11
Laboratory packs/D001, D002, D003, D005, D006, P022, U019, U044	Laboratory testing	7, 11
Waste oil/D008, D018	Testing facilities	4
Nonhazardous waste oil	Testing facilities	4, 5, 6
Waste fuels/D001	Testing facilities	1, 2, 3
Mercury waste/U151	Testing facilities	7
Waste glycol	Testing facilities	7
Flyash	Powerhouse	9
Containerized soil and water	Former Fuel Tank Farm spill	12

Notes:

* Primary management unit refers to a SWMU that currently manages or formerly managed the waste.



SOURCE: MODIFIED FROM AC ROCHESTER, 1992

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AC ROCHESTER – DAVISON ENGINEERING
FLINT, MICHIGAN

FIGURE 2

FACILITY LAYOUT

PRC ENVIRONMENTAL MANAGEMENT, INC.

The facility's research laboratories generate small amounts of waste chemicals (D001, D002, D003, D005, D006, P022, U019, and U044) and deposits them in laboratory packs, which are then stored in the Hazardous Waste Storage Building (SWMU 7). Some laboratory wastes are accumulated in Laboratory Waste Satellite Accumulation Areas (SWMU 11) before being emptied into drums and stored in the Hazardous Waste Storage Building (SWMU 7). Chemical Waste Management, Inc. of Chicago, Illinois, transports laboratory wastes to their Sauget, Illinois facility for incineration. Laboratory chemicals are evaporated or poured down drains connected to ACR's wastewater treatment plant (MID 980 568 570), which discharges to Flint's sanitary sewers.

Product-testing activities consist of running engines on test stands and in vehicles. These activities generate approximately 21,000 pounds of waste oil (D008, D018) annually. Waste oil is first accumulated in one of two Mobile Oil-Changing Carts (SWMU 6) and then stored in the Waste Oil Tank No. 5024 (SWMU 4) for less than 90 days. Environmental Waste Control (EWC) transports the wastes to its Inkster, Michigan, facility for recycling.

Waste fuels (D001) are also generated during research and testing activities. Approximately 109,340 pounds of waste fuel is generated annually and stored first in the Waste Fuel Tank No. 23 (SWMU 2) and then transferred to the Waste Fuel Tank No. 12 (SWMU 1). Michigan Recovery transports the wastes to its Romulus, Michigan, facility. Depending on the fuel blend, the waste is either recycled or sent to various incinerators in Michigan.

Approximately 40 pounds of mercury waste (U151) is generated annually from cleaning, calibrating, or discarding test equipment pressure gauges. Waste mercury is stored in the Hazardous Waste Storage Building (SWMU 7) in 55-gallon drums for less than 90 days. Chemical Waste Management, Inc. transports the waste to its Controlled Waste Division, a storage facility in Menomonee Falls, Wisconsin. Chemical Waste Management, Inc. then transports the wastes to its bulking facility in Millington, Tennessee. Bulked mercury is then transported to Bethlehem Apparatus in Bethlehem, Pennsylvania, for reprocessing.

Waste glycol is generated from the maintenance of test vehicles. Approximately 11,840 pounds of waste glycol is generated annually. It is accumulated in the Waste Glycol Satellite Accumulation Area (SWMU 10) before being stored in the Hazardous Waste Storage Building (SWMU 7). EWC transports the wastes to its Inkster, Michigan, facility. The waste is filtered and then treated in EWC's wastewater treatment plant before being discharged to the Inkster sanitary sewer system.

The powerhouse has five coal-fired boilers that produce steam for ACR facilities. The boilers generate approximately 4,830 cubic yards of coal flyash annually. Flyash is vacuumed

into the Powerhouse Flyash Hopper (SWMU 9). When full, the hopper is emptied via a chute into a dumptruck and disposed of off site at the Venice Park Development, a Class II municipal landfill in Vernon, Michigan.

The Davison facility currently has four air permits for operations at a paint booth and drying oven in the model shop and two fuel tanks in the new fuel tank farm.

In the past, waste fuel was stored in the Former Waste Fuel Tank (SWMU 3) in the former fuel tank farm. SWMU 3 is currently undergoing closure and the former fuel tank farm is undergoing a ground-water contamination investigation. The new fuel tank farm became operational in January 1992. The new tank farm consists of 22 12,000-gallon tanks; 21 tanks are for virgin fuels, and 1 is for waste fuel (SWMU 1). The tank farm is a below-grade concrete structure equipped with high-level and low-level vapor detectors and an interstitial monitoring system between tanks. The tank farm measures 80 feet wide by 200 feet long by 26 feet deep and has a roof. The area around the tank farm is concrete with expansion joint pads, and it slopes to a storm sewer drain. The tank farm filling depot is bermed and equipped with vapor detectors and an alarm.

Prior to 1986, nonhazardous waste oil was stored in the Former Waste Oil Tank (SWMU 5). This tank was administratively closed and filled with sand in 1986. Prior to January 1991, all hazardous wastes were stored in the Former Hazardous Waste Storage Building (SWMU 8), which is currently undergoing closure. SWMU 8 was the facility's original drum storage area. The structure is currently used as a storage area for drummed virgin chemicals and raw materials.

In May 1991, soil cuttings and decontamination water were generated during a ground-water investigation. These wastes were stored in approximately eight product totes and 30 55-gallon drums (SWMU 12). At the time of the inspection, the containers were stored east of the Former Hazardous Waste Storage Building (SWMU 8). On March 3, 1992, tank bottom residues from tanks in the Former Fuel Tank Farm (AOC 1) were stored in a 55-gallon drum (SWMU 13). These wastes are considered nonroutine and are awaiting chemical analysis results to determine proper off-site disposal.

2.4 HISTORY OF DOCUMENTED RELEASES

This section discusses the history of documented releases to ground water, surface water, and on-site soils at the Davison facility.

On September 27, 1983, ACR informed MDNR that two 2,000-gallon corroded product fuel tanks in the former fuel tank farm were leaking. An undetermined amount of fuel was released to the surrounding subsurface soils and to the upper and lower ground-water aquifers. The spill report indicated benzene levels as high as 520 parts per million. The facility responded by installing monitoring wells, and it planned to replace the six remaining tanks (AC Spark Plug, 1983). Approximately 500 cubic yards of benzene-contaminated soil from borehole development and monitoring well installation was disposed of at the Envirosafe Hazardous Waste Landfill in Oregon, Ohio.

In March 1984, ACR hired Neyer, Tiseo & Hindo, Ltd. (NTH), to study the extent of hydrogeological contamination and propose remediation options. In October 1986, two additional leaking product tanks were discovered and replaced during a leak testing program (NTH, 1987). In 1988, NTH developed a pump-and-treat remedial action plan to recover floating hydrocarbons, dissolved gasoline, and dissolved benzene. In addition, NTH monitored the contaminated ground-water plume (NTH, 1988). The total amount of product released to the ground water is unknown.

ACR contracted NET Midwest, Inc., to conduct quarterly ground-water sampling. At the time of the VSI, the most recent sampling had occurred in January, 1992. The results identified benzene [13,000 parts per billion (ppb)] and xylene (less than 500 ppb) in monitoring well P-12D and benzene (2,200 ppb) in well P-20 (ACR, 1992).

Currently, the facility and NTH are developing risk-based remedial criteria for a remedial action plan. In the interim, to contain the plume, the facility pumps about 25 gallons per minute. Contaminated ground water is pumped to ACR's wastewater treatment plant prior to being discharged to the City of Flint sanitary sewer system.

On April 23, 1990, a gasket failed on a benzene storage tank transfer pipeline. About 42 gallons of benzene escaped, with about 10 gallons migrating outside the containment area. ACR hired a spill response contractor to remove and dispose of approximately 10 cubic yards of benzene-contaminated soil. The local health department approved the soil disposal at Richfield Disposal, a Class II municipal landfill. The fitting was replaced.

On March 7, 1992, a gasoline tank in the new tank farm overflowed as a result of an equipment malfunction. Gasoline filled up a roof vent and spilled off the roof onto the concrete area around the farm. Approximately 177 gallons of gasoline flowed into a plant storm water sewer system. This system empties into the City of Flint storm water sewer, which empties directly into Gilkey Creek, located approximately 750 feet south of the Davison facility which

then empties into the Flint River. Five booms were deployed in the creek, and by March 8, 1992, the creek had been cleaned up. ACR made tank farm design changes to prevent future releases and constructed a weir in the storm sewer catch basin.

During the VSI, PRC did not observe any further evidence of releases.

2.5 REGULATORY HISTORY

The Davison facility submitted a Notification of Hazardous Waste Activity to EPA on August 11, 1980. The facility submitted RCRA Part A permit on October 17, 1980, listing the following process codes and capacities: 31,350 gallons of storage in containers (S01) and 8,500 gallons of storage in tanks (S02). The application only identified the D001 waste code.

The facility submitted revised Part A permit applications on October 3, 1988, and October 16, 1989. The first revision requested an administrative closure of the skimmer tank and the wastewater lift station (AC Spark Plug, 1988). The second revision requested an administrative closure of the Waste Oil Tank No. 5024 (SWMU 4), and the Former Waste Oil Tank (SWMU 5) (ACR, 1989). The closures were requested because the facility included the units on its original Part A permit, but hazardous wastes were never managed in the units. MDNR approved the withdrawal requests on June 28, 1989 (MDNR, 1989), and January 23, 1990 (MDNR, 1990a).

The facility is undergoing closure of the two remaining permitted hazardous waste storage areas: the Former Hazardous Waste Storage Building (SWMU 8) and the Former Waste Fuel Tank (SWMU 3) (Techna Corporation, 1988). MDNR approved a modified closure plan, subject to the following: other RCRA units required separate closure plans, method detection limits were updated, a soil analysis method was modified, metals contamination criteria were modified, and approved closure activities were to commence no later than April 1, 1990 stipulations (MDNR, 1990b). The Former Hazardous Waste Storage Building is currently used to store drummed raw materials. The Former Waste Fuel Tank is empty and being closed as part of the former tank farm ground-water remediation. The tanks in the farm have been emptied. The facility expects closure to be completed by the middle of 1992.

The facility currently operates as a large quantity generator of hazardous waste, and it stores wastes for less than 90 days. Since 1983, MDNR has inspected the facility annually and has found it in compliance with RCRA regulations. No compliance violations have been issued to the facility.

The facility has four operating air permits for the following units: a 2000-gallon benzene tank; a 6,000-gallon benzene tank; an experimental paint drying oven; and a paint spray booth with an oven. The facility has no documented history of air permit compliance problems. The facility has no documented history of odor complaints from area residents.

The facility is not required to have a National Pollutant Discharge Elimination System permit. All Davison facility drains and sewers are connected to the ACR wastewater treatment plant (MID 980 568 570). All Davison facility storm sewers are connected to City of Flint storm sewers that empty into Gilkey Creek, which empties into the Flint River.

2.6 ENVIRONMENTAL SETTING

This section describes the climate, flood plain and surface water, geology and soils, and ground water in the vicinity of the Davison facility.

2.6.1 Climate

The climate in Genesee County is continental. The average daily temperature is 57.5°F. The lowest average daily temperature is -1°F in January. The highest average daily temperature is 94°F in July.

The total annual precipitation for the county is 29.58 inches (USDA, 1972). The mean annual lake evaporation for the area is about 30 inches (USDA, 1968). The 1-year, 24-hour maximum rainfall is about 2.1 inches (USDC, 1968). The average depth of snow on days with snow cover is 5 inches (USDA, 1972).

2.6.2 Flood Plain and Surface Water

The Davison facility is not located in a 100-year flood plain (MDNR, 1992). The nearest surface water body, Gilkey Creek, is located about 750 feet south of the facility and is used for storm water runoff. Gilkey Creek discharges to the Flint River, which is used for recreational purposes (MDNR, 1992).

The Davison facility is mostly flat and paved. Stormwater run-off drainage is directed towards storm sewers throughout the facility. The storm sewers are connected with the City of Flint's storm sewer system, which empties into Gilkey Creek. Facility drains and sanitary sewers at the facility are connected to ACR's wastewater treatment plant. Treated water is discharged to the City of Flint sanitary sewer system, which operates a wastewater treatment plant.

The City of Flint and Genesee County purchase water from the City of Detroit. Detroit obtains its water from Lake Huron, located approximately 60 miles east of the facility. Flint distributes water to most of the municipality (MDPH, 1992). Private wells are located throughout Genesee County, but no private wells are located within Flint city limits (Flint Water Department, 1992).

2.6.3 Geology and Soils

On-site soils have not been characterized by the USDA Soil Conservation Service. However, soils have been characterized just east of the Davison facility. Conover series soils predominate in the facility area. Conover soils are somewhat poorly drained, nearly level, and form in loamy material that has a high lime content. The subsoil typically consists of clay loam. Conover soils can reach a depth of 30 inches (USDA, 1972).

Glacial deposits of the Pleistocene age underlie the soils in the facility area. These deposits were primarily formed during the Wisconsinan Glacial Epoch. Sediments in the area of the facility consist of glacial outwash sands, gravels, and post-glacial alluvium. These sediments are typically fine to coarse granular materials. The thickness of the outwash deposits ranges from 3 feet to over 100 feet (NTH, 1987). Throughout Genesee County, these deposits are typically 150 feet thick (Genesee County Health Department, 1992).

Paleozoic-age bedrock deposits underlie the Pleistocene glacial deposits. The bedrock consists mostly of sandstone of the Saginaw Formation, but it also consists of sandy shale, shale, and limestone. The Saginaw Formation was deposited as fine- to medium-grained sand in the early portion of the Pennsylvanian Period (NTH, 1987).

2.6.4 Ground Water

Ground water in the vicinity of the facility is encountered in the glacial drift soil subsurface. A silty clay aquitard with low hydraulic conductivity separates an upper granular unit (perched aquifer) and a lower granular unit. Ground water predominately flows to the northwest (NTH, 1987).

Both granular units are water bearing and are involved in the ongoing ground-water remediation at the facility (NTH, 1987). Ground-water contamination occurred over time as underground fuel storage tanks in the Former Fuel Tank Farm (AOC 1) corroded and leaked. An unknown amount of benzene and gasoline was released to the ground water. At the time of the

inspection, the most recent sampling had occurred in January 1992. Analytical results identified benzene (13,000 ppb) and xylene (less than 500 ppb) in monitoring well P-12D, and benzene (2,200 ppb) in well P-20 (ACR, 1992).

Currently, the facility pumps 25 gallons per minute to contain the contaminated ground-water plume. Contaminated ground water is pumped to ACR's wastewater treatment plant before being discharged to the City of Flint sewer system.

Private wells within the Flint city limits are used for commercial and industrial purposes; these wells obtain water from the sandstone bedrock aquifer. No private drinking water wells exist in Flint (Flint Water Department, 1992). Some private drinking water wells exist in Genesee County. About 85 percent of these wells obtain water from the sandstone bedrock aquifer (Genesee County Health Department, 1992).

The City of Flint and Genesee County purchase drinking water from the City of Detroit. Detroit obtains its water from Lake Huron (MDPH, 1992).

2.7 RECEPTORS

The Davison facility occupies approximately 80 acres in a mixed commercial and residential area in Flint, Michigan. Flint has a population of about 138,192 (Flint Chamber of Commerce, 1992).

The facility is bordered on the north by Davison Road and a residential area, on the west by the Chesapeake and Ohio Railroad and the AC Rochester Dort Highway Complex (EPA ID No. MID 005 356 647), on the south by Longway Boulevard and a commercial area, and on the east by the AC Rochester Averill Avenue Complex (EPA ID No. MID 980 568 745) and a residential area. The nearest school, Potter School, is located 0.5 mile north of the facility.

Access is controlled by a 6-foot-high fence topped with barbed wire. The fence surrounds the facility, and a closed-circuit surveillance system monitors most of the facility. A security guard is positioned at a gate between the engineering complex and the parking lot. Visitors must sign in and receive a pass to walk around the facility.

The nearest surface water body, Gilkey Creek, is located 750 feet south of the facility and is used for storm water runoff. Four stream miles downstream from the facility Gilkey Creek discharges to the Flint River, which is used recreationally (MDNR, 1992). A spill migrating to facility storm sewers could release to Gilkey Creek, but the facility has installed many

containment structures to prevent such a release. All facility drains and sanitary sewers are connected to the ACR wastewater treatment plant.

In Flint, ground water is used for commercial and industrial processes. A 150-feet deep bedrock aquifer is the primary source of ground water. No wells are known to exist downgradient of the facility. However, private wells exist in areas of Genesee County located upgradient and northwest of the facility. The potential for future releases to ground water is low, because the facility has installed new containment structures and release controls.

Sensitive environments are not located on-site. No wetlands are located within a 2-mile radius of the site. The Genesee Recreation Area is located 3.5 miles north of the facility. The For-Mar Nature Preserve is located 1.5 miles northeast of the facility (USGS, 1975).

3.0 SOLID WASTE MANAGEMENT UNITS

This section describes the 13 SWMUs identified during the PA/VSI. The following information is presented for each SWMU: description of the unit, dates of operation, wastes managed, release controls, history of documented releases, and PRC observations.

SWMU 1	**Waste Fuel Tank No. 12**
Unit Description:	This unit is located in the southeast corner of the new fuel tank farm. The entire tank farm is housed in a roofed, below-grade concrete structure located south of the engineering building. The unit is used to store waste fuels from engineering and testing activities. The unit is a 12,000-gallon stainless-steel tank measuring 21 feet long by 7 feet in diameter (see Photograph No. 1).
Date of Startup:	This unit began operation in February 1992.
Date of Closure:	The unit is active with less than 90-day storage.
Wastes Managed:	This unit manages contaminated and spent fuels (D001). Wastes from this unit are ultimately recycled or incinerated.
Release Controls:	The unit is in a below-grade concrete tank farm with an additional concrete secondary containment structure. The unit is equipped with high-level and low-level vapor detectors connected to alarms. The tank farm has no floor drains.
History of Documented Releases:	No releases from this SWMU have been documented.
Observations:	The tank farm is new. PRC observed no cracks in the tank farm containment and no evidence of release. The roof would appear to prevent most rainwater from entering the farm.

SWMU 2	**Waste Fuel Tank No. 23**
Unit Description:	This unit is located outdoors 50 feet north of the Former Fuel Tank Farm (AOC 1) and 10 feet southwest of the Waste Oil Tank. This 2,000-gallon underground tank measures 12 feet long by 5 feet 4 inches in diameter. Contaminated and waste fuels from testing activities are stored in this unit before being stored in the Waste Fuel Tank (SWMU 1). The unit is constructed of a stainless-steel inner tank, and a carbon-steel outer tank with a fiberglass coating (see Photograph No. 2).
Date of Startup:	This unit began operation in February 1992.
Date of Closure:	The unit is active with less than 90-day storage.
Wastes Managed:	This unit manages contaminated and spent fuels (D001). Wastes in this unit are later managed in the Waste Fuel Tank (SWMU 1).
Release Controls:	A liquid-detection sensor is located between the unit's double walls. The tank's volume is monitored daily with a dip stick.
History of Documented Releases:	No releases from this SWMU have been documented.
Observations:	The unit is underground. No evidence of release was observed.
SWMU 3	**Former Waste Fuel Tank**
Unit Description:	This unit is located outdoors in the northwest corner of the Former Fuel Tank Farm (AOC 1). This 2,000-gallon stainless-steel underground storage tank was used to store contaminated and waste fuels. The unit is empty and awaiting closure (see Photograph No. 3).
Date of Startup:	This unit began operation in 1983. The tank farm began operation in 1958.

Date of Closure:	This unit has been inactive since February 1992 and is undergoing RCRA closure.
Wastes Managed:	This unit was used to manage contaminated and spent fuels (D001).
Release Controls:	This unit is double-walled and equipped with vapor detectors and interstitial monitors. Numerous ground-water monitoring wells are located around the tank farm.
History of Documented Releases:	No releases from this SWMU have been documented. However, fuel tanks in the tank farm have a history of benzene and gasoline releases.
Observations:	The unit was empty and below ground at the time of the inspection. The entire tank farm will be excavated and removed in 1992.
SWMU 4	**Waste Oil Tank No. 5024**
Unit Description:	This unit is located outdoors 10 feet northeast of Waste Fuel Tank No. 23 (SWMU 2). The tank used to be located in a concrete trench. In early 1991, the tank was raised above the trench to facilitate visual inspections (see Photograph No. 2). This 1,000-gallon steel tank measures 18 feet long by 38 inches in diameter. The unit is used to store waste oil from testing activities.
Date of Startup:	This unit began operating in 1989.
Date of Closure:	The unit is active.
Wastes Managed:	This unit manages waste oil (D008, D018). Wastes from this unit are recycled.
Release Controls:	The unit is located over a concrete secondary containment trench.
History of Documented Releases:	No releases from this SWMU have been documented.

Observations:	The concrete trench is five feet wide by eight feet deep and constructed of 9.5-inch thick reinforced concrete. PRC observed no evidence of release and no cracks in the concrete. The tank appeared to be in good condition.
SWMU 5	**Former Waste Oil Tank**
Unit Description:	This unit is located outside, about 15 feet north of the Waste Oil Tank (SWMU 4). This 1,000-gallon steel underground tank was used to store waste oil. The unit is full of sand (see Photograph No. 4).
Date of Startup:	This unit began operating in 1957.
Date of Closure:	In 1986, the unit passed a pressure test, and was filled with sand. The State of Michigan approved the administrative closure of this unit.
Wastes Managed:	This unit was used to store nonhazardous waste oil.
Release Controls:	None.
History of Documented Releases:	No releases from this SWMU have been documented.
Observations:	At the time of the inspection, the tank had been filled with sand, and its portal had been cemented shut. PRC observed no evidence of release.
SWMU 6	**Mobile Oil-Changing Carts**
Unit Description:	The two mobile oil-changing carts are used indoors in testing facilities. Carts are used when test engines require oil changes. Each cart has two compartments, one for fresh oil and one for disposing of waste oil (see Photograph No. 5). When the waste oil compartment is full, the cart is taken to the oil pump by the Waste Glycol Satellite Accumulation Area (SWMU 10) (see Photograph

	No. 10). Waste oil is then pumped into the Waste Oil Tank No. 5024 (SWMU 4). Each 30-gallon tank is constructed of stainless steel.
Date of Startup:	These units began operating in 1976.
Date of Closure:	These units are active.
Wastes Managed:	These units manage waste oil (D008, D018). Wastes from these units are later managed in the Waste Oil Tank No. 5024 (SWMU 4).
Release Controls:	The carts are located indoors.
History of Documented Releases:	No releases from this SWMU have been documented.
Observations:	The cart observed during the VSI appeared to be in sound condition, clean, and sturdy.
SWMU 7	**Hazardous Waste Storage Building**
Unit Description:	This unit is located outside. The unit is used to store all of the Davison facility's hazardous wastes generated from research and testing activities. Wastes include paint wastes (D001), waste mercury (U151), waste glycol, and various laboratory chemicals. The steel building measures 20 feet by 8 feet by 7 feet and can store about 20 55-gallon drums (see Photograph No. 6).
Date of Startup:	The unit began operation January 1991.
Date of Closure:	The unit is active.
Wastes Managed:	This unit manages paint wastes (D001), waste mercury (U151), waste glycol, and various laboratory chemicals. All wastes are stored in 55-gallon drums. Wastes from this unit are incinerated, treated, or recycled.

Release Controls: The unit is equipped with heating and air conditioning. The floor is raised, providing a large secondary containment area equipped with a liquid-detection sensor and an alarm. The building is fire- and explosion-proof and is equipped with internal sprinklers. The unit has three doors that are kept locked when in use.

History of Documented Releases: No releases from this unit have been documented.

Observations: At the time of the inspection, hazardous and nonhazardous wastes were stored in the unit. PRC observed 20 55-gallon drums. One drum contained trash and was stored open, four drums were labeled "waste paraffin w/phenol," four were labeled "EDM waste," three contained paint-related waste, one contained thinner, one contained freon, and six could not be identified. In addition, one waste toner container was observed. No evidence of release was noted.

SWMU 8 **Former Hazardous Waste Storage Building**

Unit Description: This unit is located in a parking lot west of the engineering building. The building consists of a 20-foot by 15-foot pole barn building at the north end, and a roofed and fenced 20 feet by 25 feet concrete and bermed storage pad at the south (see Photograph No. 7). Currently, drummed virgin raw materials are stored in this unit.

Date of Startup: The unit began operation March 1979.

Date of Closure: The unit has been inactive since 1990 and is currently undergoing closure activities.

Wastes Managed: The unit managed waste gasoline, oil, and halogenated solvents in 55-gallon drums.

Release Controls: The pole barn area has a concrete floor with one floor drain that empties to a sump. The concrete pad area has a 6-inch concrete berm and a concrete floor with no floor drains.

History of Documented Releases:	No releases from this SWMU have been documented.
Observations:	At the time of the inspection, the concrete pad area was almost full of product drums. The pole barn area contained paint products. PRC observed no cracks in either of the concrete floors. The building was in good condition, and PRC observed no evidence of release.
SWMU 9	**Powerhouse Flyash Hopper**
Unit Description:	The powerhouse flyash hopper is located outside of the ACR powerhouse at the south end of the Davison facility. The unit is used to store flyash. The unit is constructed of ceramic blocks and has a capacity of 6,260 cubic feet (see Photograph No. 8). The unit is elevated to enable a dumptruck to park under it. A chute is lowered to fill the truck and empty the hopper.
Date of Startup:	This unit began operation in 1952.
Date of Closure:	This unit is active.
Wastes Managed:	The unit manages nonhazardous flyash generated from coal-fired boilers. Wastes from this unit are ultimately disposed of in a municipal landfill.
Release Controls:	The unit has no release controls.
History of Documented Releases:	No releases from this SWMU have been documented.
Observations:	PRC observed the unit from the ground and noted no evidence of release. However, releases may occur when hoppers emptied.

SWMU 10	**Waste Glycol Satellite Accumulation Area**
Unit Description:	The waste glycol satellite accumulation area is located inside the east-central side of the facility. The unit is used to store waste glycol generated from testing activities. The unit is a 55-gallon steel drum (see Photograph No. 10).
Date of Startup:	This unit began operation in 1990.
Date of Closure:	The unit is active.
Wastes Managed:	This unit manages drums of waste glycol generated during testing activities. Wastes from this unit are transferred to the Hazardous Waste Storage Building (SWMU 7) when drums are full. Wastes are ultimately treated off site.
Release Controls:	The unit is indoors. PRC observed no floor drains in the area.
History of Documented Releases:	No releases from this SWMU have been documented.
Observations:	At the time of the inspection, the unit contained waste glycol and was less than half full. The room is big enough to contain a full spill, and the door to the outside has a threshold. PRC observed no cracks in the floor or evidence of release.
SWMU 11	**Laboratory Waste Satellite Accumulation Areas**
Unit Description:	Laboratory waste satellite accumulation areas are located throughout the 20 laboratories in the facility. The unit is used to dispose of chemical bottles and miscellaneous laboratory wastes. Each steel unit has a capacity of 5 gallons and has a lid (see Photograph No. 11).
Date of Startup:	The laboratories began using these units in 1987.
Date of Closure:	The units are active.

Wastes Managed:	These units manage all sorts of laboratory wastes such as chemically treated paper towels, empty chemical bottles, pipettes, and other laboratory refuse. These solid wastes are transferred daily into laboratory packs and stored in the Hazardous Waste Storage Building (SWMU 7). The wastes are ultimately picked up and incinerated off site.
Release Controls:	The units are stored indoors and equipped with heavy, self-closing lids. Most wastes are disposed of in a dry state. Each laboratory has sprinklers. No floor drains are located in the laboratories.
History of Documented Releases:	No releases from these SWMUs have been documented.
Observations:	The unit PRC observed was in good condition. PRC noted no corrosion on the outside of the unit or evidence of release.
SWMU 12	**Containerized Soil and Water**
Unit Description:	Approximately eight product totes and 30 55-gallon drums are stored outside on asphalt on the east side of the Former Hazardous Waste Storage Building (SWMU 8). Some of the drums contain contaminated soil and some contain contaminated water. All of the drums are stored on pallets. All of the totes contain soil and are covered with plastic. The wastes were generated during the ground-water contamination investigation at the Former Fuel Tank Farm (AOC 1). The materials are awaiting chemical analysis for final disposal (see Photographs No. 7 and 13).
Date of Startup:	These materials were generated and placed in the unit in May 1991.
Date of Closure:	The unit is active, awaiting final disposal.
Wastes Managed:	Soil and water generated during the ground-water contamination investigation at the Former Fuel Tank Farm (AOC 1) are managed in product totes and 55-gallon drums. Ultimately, these materials will either be disposed of in a municipal landfill or incinerated.

Release Controls:	The drums are stored on pallets. The product totes are covered with plastic and tape.
History of Documented Releases:	No releases from this SWMU have been documented.
Observations:	The drums and totes are stored on an asphalt surface. PRC observed some cracks in the asphalt near the storage area. Several of the drums are bulging, and one had a broken lid seam. According to facility representatives, the ground water in the drums froze and expanded, causing some of the drums to bulge and rupture. Many of the drums' sides and tops are rusty. Most drums are bound together with strapping tape and stored on pallets. PRC observed no evidence of release.
SWMU 13	**Tank Bottom Drum**
Unit Description:	This unit is a 55-gallon steel drum of residue collected from the bottom of tanks in the Former Fuel Tank Farm (AOC 1). The tanks were emptied as part of the tank farm closure and remediation activities. The unit is located at the north end of the Former Fuel Tank Farm (see Photograph No. 12).
Date of Startup:	This unit was placed into operation on March 3, 1992.
Date of Closure:	This unit is active, awaiting final disposal.
Wastes Managed:	This unit manages residues from the bottom of fuel tanks in the Former Fuel Tank Farm (AOC 1). Analytical results of the contents will determine if the waste is disposed of in a municipal landfill or incinerated.
Release Controls:	The unit is stored closed. Otherwise, the unit has no release controls.
History of Documented Releases:	No releases from this SWMU have been documented.

Observations: During the VSI, facility representatives did not know what the drum contained or why it was stored in its present location. The drum was in good condition. PRC observed no evidence of release.

4.0 AREAS OF CONCERN

PRC identified one AOC during the PA/VSI. This AOC is discussed below; its location is shown in Figure 2.

AOC 1 **Former Fuel Tank Farm**

The Former Fuel Tank Farm is an AOC because of the extent of ground-water and soil contamination. Currently, the facility is containing a benzene and gasoline ground-water plume by pumping and treating ground water at the ACR wastewater treatment plant. The facility plans to develop and implement a remedial action plan for this area in conjunction with the closure of the Former Waste Fuel Tank (SWMU 3).

The Former Fuel Tank Farm was constructed in 1958 and measures approximately 100 feet by 100 feet. It contained 22 100,000-gallon product tanks, of which 17 were steel and 5 were fiberglass with reinforced plastic.

5.0 CONCLUSIONS AND RECOMMENDATIONS

The PA/VSI identified 13 SWMUs and one AOC at the Davison facility. Background information on the facility's location, operations, waste generating processes, history of documented releases, regulatory history, environmental setting, and receptors is presented in Section 2.0. SWMU-specific information, such as the unit's description, dates of operation, wastes managed, release controls, history of documented releases, and observed condition, is presented in Section 3.0. The AOC is discussed in Section 4.0. Following are PRC's conclusions and recommendations for each SWMU and AOC. Table 3 summarizes the SWMUs and AOC at the Davison facility and recommended further actions.

SWMU 1 **Waste Fuel Tank No. 12**

Conclusions: This tank is in a new, state-of-the-art tank farm. The unit became active in February 1992. The unit is connected to external alarms and has two containment structures. Because of these release controls, the unit has a low potential for a release to ground water, surface water, air, and on-site soils.

Recommendations: PRC recommends no further action for this SWMU.

SWMU 2 **Waste Fuel Tank No. 23**

Conclusions: This tank was installed in February 1992. The underground unit is equipped with a liquid sensor between its double walls. Because of these release controls, the unit has a low potential for a release to ground water, surface water, air, and on-site soils.

Recommendations: PRC recommends no further action for this SWMU.

SWMU 3 **Former Waste Fuel Tank**

Conclusions: This unit is empty and no longer stores waste. The facility plans to close the unit and excavate it in 1992. The unit has no documented history of releases. The unit has a low potential for a release to ground water, surface water, air, and on-site soils.

Recommendations: PRC recommends completion of closure requirements.

SWMU 4 **Waste Oil Tank No. 5024**

Conclusions: This unit and its secondary containment appeared to be in good condition. The unit manages waste oils. The unit has a low potential for a release to ground water, surface water, air, and on-site soils.

Recommendations: PRC recommends no further action for this SWMU.

SWMU 5 **Former Waste Oil Tank**

Conclusions: The unit was pressure tested and administratively closed in 1986. Prior to closure the unit managed nonhazardous waste oils. This unit is full of sand and no longer manages wastes. The unit has a low potential for a release to ground water, surface water, air, and on-site soils.

Recommendations: PRC recommends no further action for this SWMU.

SWMU 6 **Mobile Oil-Changing Carts**

Conclusions: These two indoor units manage waste oils (D008, D018). They are constructed of stainless steel and are well maintained. They have a low potential for a release to ground water, surface water, air, and on-site soils.

Recommendations: PRC recommends no further action for this SWMU.

SWMU 7 **Hazardous Waste Storage Building**

Conclusions: This unit began operation in January 1991. The unit has an adequate secondary containment structure, and the unit is equipped with numerous safety features to reduce the risk of a release to the environment. The unit has a low potential for a release to ground water, surface water, air, and on-site soils.

Recommendations: PRC recommends analysis of unidentified waste on site.

SWMU 8 **Former Hazardous Waste Storage Building**

Conclusions: This unit has not been used to store wastes since 1990. The unit has a sound concrete, bermed floor that would have contained past spills. The unit has no documented history of releases. Currently, the unit stores drummed raw materials. The unit has a low potential for a release to ground water, surface water, air, and on-site soils.

Recommendations: PRC recommends completion of closure requirements.

SWMU 9 **Powerhouse Flyash Hopper**

Conclusions: This unit manages nonhazardous flyash from coal-fired boilers. The unit appeared to be in good condition. Any release from this unit is likely to occur during emptying and would disperse via the wind. The potential for release to environmental media is summarized below.

Ground Water: Low. Residual wastes are solid and not expected to migrate below ground surface to the bedrock aquifer.

Surface Water: Low. Wastes are not expected to migrate in a volume capable of affecting nearby surface water bodies.

Air: Low. Dispersal of nonhazardous wastes is likely to occur when the hopper is emptied and when open dumptrucks transport the waste to landfills.

On-Site Soils: Low. A release to soils could occur during hopper emptying.

Recommendations: PRC recommends no further action for this SWMU.

SWMU 10 **Waste Glycol Satellite Accumulation Area**

Conclusions: This unit is stored closed and indoors on a concrete floor with no floor drains or cracks. The unit has a low potential for a release to ground water, surface water, air, and on-site soils.

Recommendations: PRC recommends no further action for this SWMU.

SWMU 11 **Laboratory Waste Satellite Accumulation Areas**

Conclusions: These units are stored closed and indoors on tile floors with no floor drains or visible cracks. These units primarily manage contaminated solid wastes. The units are well maintained and have a low potential for release to ground water, surface water, air, and on-site soils.

Recommendations: PRC recommends no further action for this SWMU.

SWMU 12 **Containerized Soil and Water**

Conclusions: The facility is awaiting chemical analysis of the contents to determine proper disposal. During the VSI, several drums were bulging, rusting, or in poor condition, and one drum's lid had split open. The potential for release to environmental media is summarized below.

Ground Water and On-Site Soils: Moderate. Liquid and solid wastes are stored on pallets on an asphalt surface containing minor cracks. Contents could potentially spill from the bulging and ruptured drums. Liquid wastes could spill through the cracks and affect ground water and on-site soils.

Surface Water: Moderate. Contents could potentially spill from the bulging and ruptured drums. Liquid wastes could migrate about 100 feet east to facility storm sewers, which empty into Gilkey Creek.

Air: Low. Most of the wastes are stored closed. Some of the wastes in drums in poor condition may volatilize to the air.

Recommendations: PRC recommends that EPA encourage the facility to expedite the disposal of these wastes.

SWMU 13 **Tank Bottom Drum**

Conclusions: This drum is stored closed and in good condition. The facility is awaiting chemical analysis to determine proper disposal for the waste. The unit has

a low potential for a release to ground water, surface water, air, and on-site soils.

Recommendations: PRC recommends EPA request the facility to move the unit to the Hazardous Waste Storage Building (SWMU 7).

AOC 1 **Former Fuel Tank Farm**

Conclusions: A release to subsurface soils and ground water has been documented. The facility is developing a remedial action plan for the soil and ground-water contamination in the area as part of closure at the Former Waste Fuel Tank (SWMU 3). The facility is pumping and treating ground water in the area to contain the plume. The potential for a release to surface water or air is low because of this handling of the AOC.

Recommendations: PRC recommends that the proposed remediation proceed as planned.

REFERENCES

AC Rochester (ACR), 1989. Letter from Susan D. Kelsey, Divisional Environmental Liaison Engineer, to Steven R. Sliver, Michigan Department of Natural Resources (MDNR), October 16.

ACR, 1992. Letter from Thomas M. Caltrider, Environmental Engineer, to Benjamin Hall, MDNR.

AC Spark Plug, 1983. Memorandum from C. R. Wendel, Assistant Chief Engineer, to M. P. Zdyb, Environmental Activities Staff, General Motors, September 30.

AC Spark Plug, 1988. Letter from Susan D. Kelsey, Senior Environmental Engineer, to Mr. Kenneth Burda, MDNR, October 3.

Flint Chamber of Commerce, 1992. Telephone Conversation between Tamara McKay and Jeff Swano, PRC Environmental Management, Inc. (PRC), April 30.

Flint Water Department, 1992. Telephone Conversation between Jack Hicks, Supervisor, and Jeff Swano, PRC, May 4.

Genesee County Health Department, 1992. Telephone Conversation between Brian McKenzie and Jeff Swano, PRC, May 4.

Michigan Department of Natural Resources (MDNR), 1989. Letter from Alan J. Howard, Chief, Waste Management Division, to Susan D. Kelsey, ACR, June 28.

MDNR, 1990a. Letter from Alan J. Howard, Chief, Waste Management Division, to Susan D. Kelsey, ACR, January 23.

MDNR, 1990b. Letter from Alan J. Howard, Chief, Waste Management Division, to Susan D. Kelsey, ACR, January 23.

MDNR, 1992. Telephone Conversation between Mary Ann Dolehanty, Land and Water Management, and Jeff Swano, PRC, April 29.

Michigan Department of Public Health (MDPH), 1992. Telephone Conversation between Tim Batton, Water Supply Services Division, and Jeff Swano, PRC, April 30.

Neyer, Tiseo & Hindo, Ltd. (NTH), 1987. Report on Field Investigation - 1986/1987, Project No. 84843 AW, June 22.

NTH, 1988. Letter from Robert F. Gorman, Project Manager, to Carroll Wendel, AC Spark Plug, October 6.

Techna Corporation, 1988. Hazardous Waste Storage Area Closure Plan, Job No. 207-8001, October 14.

U.S. Department of Agriculture, 1972. Soil Survey, Genesee County, Michigan, April.

U.S. Department of Commerce, 1968. Climatic Atlas of the United States, Government Printing Office.

U.S. Geological Survey, 1975. Flint North and Davison, Michigan Quadrangle Topographic Maps, 7.5 Minute Series.

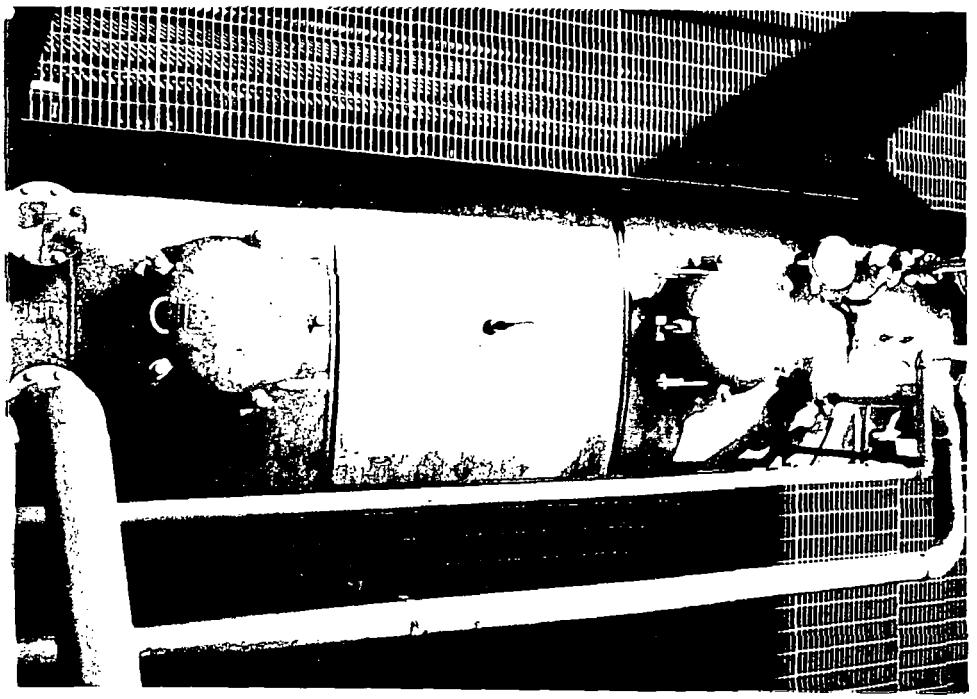
ATTACHMENT A

VISUAL SITE INSPECTION SUMMARY AND PHOTOGRAPHS

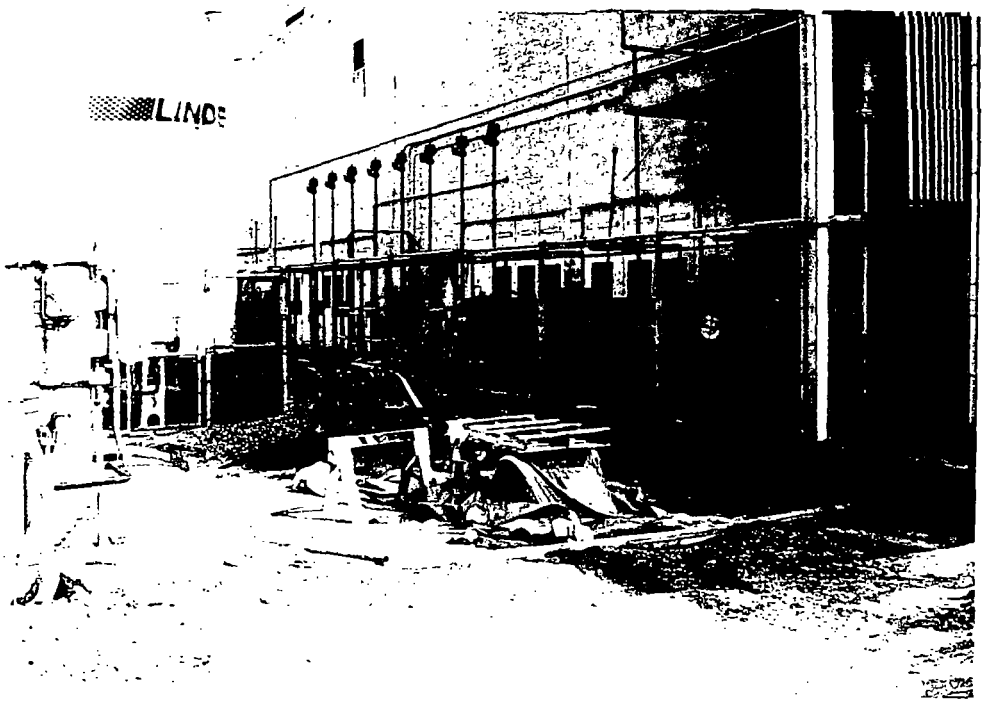
VISUAL SITE INSPECTION SUMMARY

AC Rochester, Davison Engineering
Flint, Michigan
MID 980 568 620

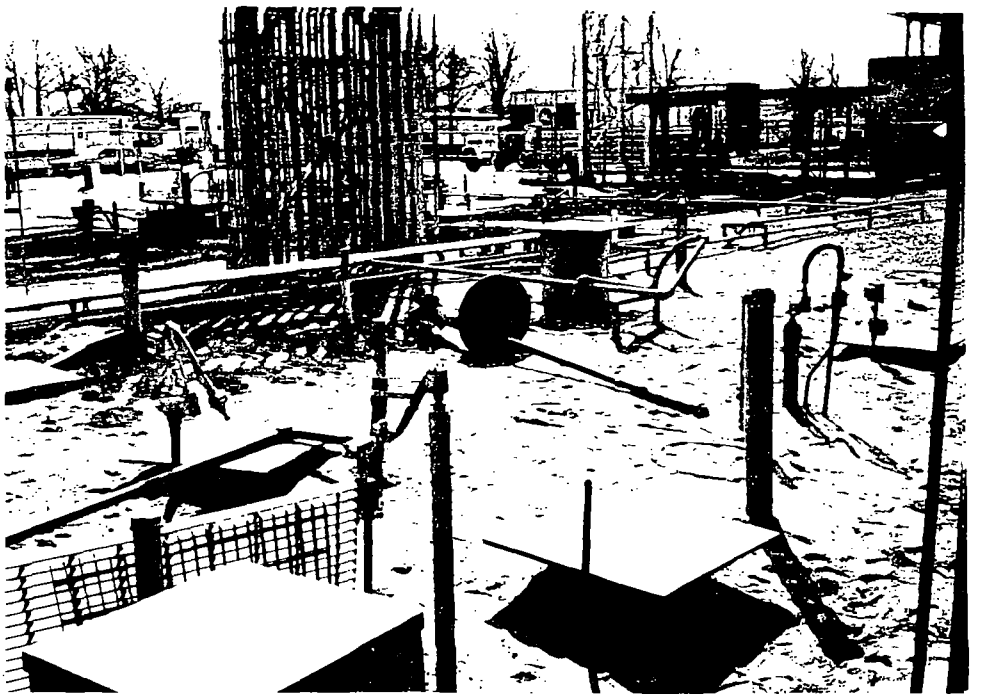
Date:	March 26, 1992
Facility Representatives:	Mr. Ronald L. Neahusan, Supervisor Environmental Engineering, Mr. Thomas M. Caltrider, Environmental Engineer Mr. Richard L. Hubler, Divisional Waste Minimization Recycling Engineer Mr. Hank A. Sullivan, Staff Engineer Facilities Mr. C.R. Wendel, Operations General Supervisor, Wastewater Treatment Plant Mr. Pier M. Bollini, General Supervisor, Salvage Mr. Roy Donaldson, Associate Engineer Mr. Phil Parker, Chief Powerhouse Engineer
Inspection Team:	Jeff Swano, PRC Environmental Management, Inc. Stan Labunski, PRC Environmental Management, Inc.
Photographer:	Jeff Swano
Weather Conditions:	Calm, partly cloudy, temperatures about 45°F
Summary of Activities:	The visual site inspection (VSI) began at 8:00 am with an introductory meeting. The inspection team discussed the purpose of the VSI and the agenda for the visit. Facility representatives then discussed the AC Rochester and Davison Engineering facility's past and current operations, solid wastes generated, and release history. Most information was exchanged on a question-and-answer basis. The VSI tour began at 10:00 am. The tour began in the engineering building where the inspection team observed the research laboratories and the testing facilities. The inspection team observed Laboratory Waste Satellite Accumulation Areas (SWMU 11), Mobile Oil-Changing Carts (SWMU 6), and the Waste Glycol Satellite Accumulation Area (SWMU 10) . The VSI proceeded outdoors where the inspection team observed the Waste Fuel Tank No. 23 (SWMU 2), the Former Waste Oil Tank (SWMU 5), the Waste Oil Tank No. 5024 (SWMU 4) and its concrete trench, the Former Fuel Tank Farm (AOC 1) and location of the Former Waste Fuel Tank (SWMU 3), the drum of tank bottoms residue (SWMU 13), the new tank farm and its Waste Fuel Tank No. 12 (SWMU 1), the Hazardous Waste Storage Building (SWMU 7), the Former Hazardous Waste Storage Building (SWMU 8), and the Containerized Soil and Water (SWMU 12). At 12:00 noon, the inspection team and facility representatives drove to the powerhouse to observe the flyash hopper (SWMU 9). At 1:15 pm, the inspection team and facility representatives held an exit meeting. The inspection team departed the site around 1:35 pm.



Photograph No. 1 — Location: SWMU 1
Orientation: South — Date: 03/26/92
Description: Waste Fuel Tank in new fuel tank farm

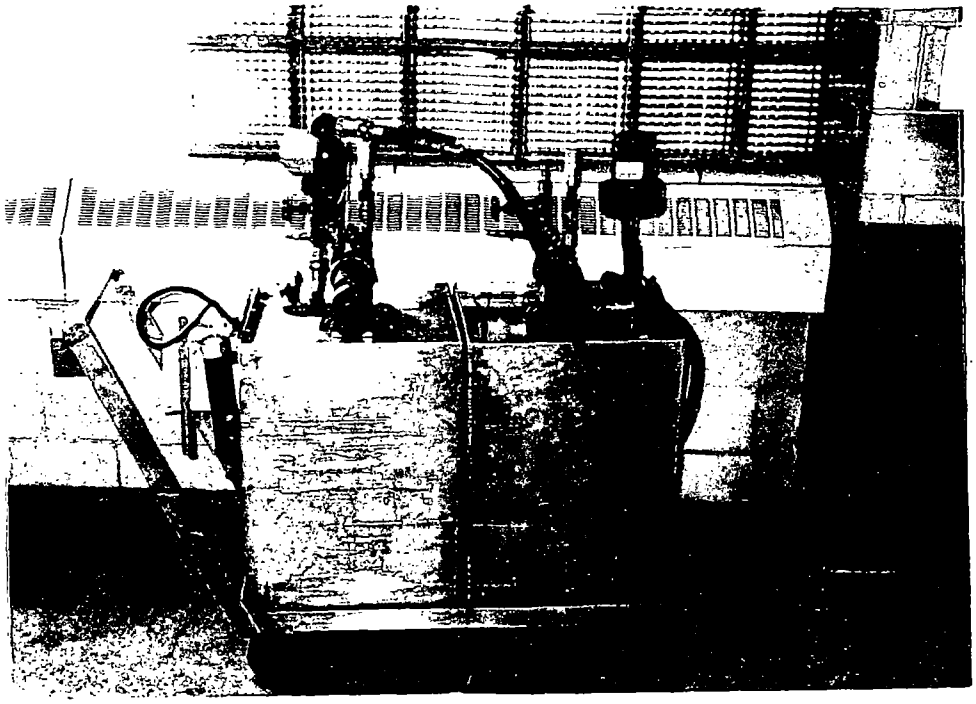


Photograph No. 2 — Location: SWMU 2, SWMU 4
Orientation: North — Date: 03/26/92
Description: Waste Fuel Tank No. 23 (SWMU 2) is visible in the foreground beneath the horses, pallet, and tarp. The Waste Oil Tank (SWMU 4) in the background straddles a concrete trench

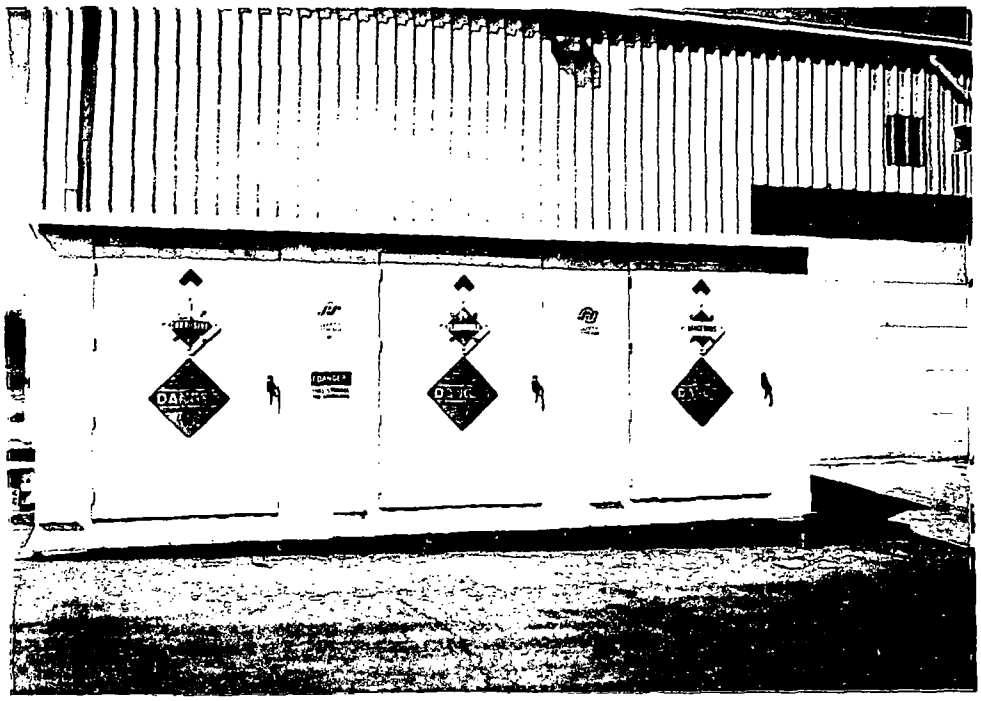


Photograph No. 3 Location: SWMU 3, AOC 1
Orientation: Southeast Date: 03/26/92
Description: The Former Waste Fuel Tank (SWMU 3) is visible in the foreground, beneath the nearest plywood square. The Former Fuel Tank Farm (AOC 1) is in the background.

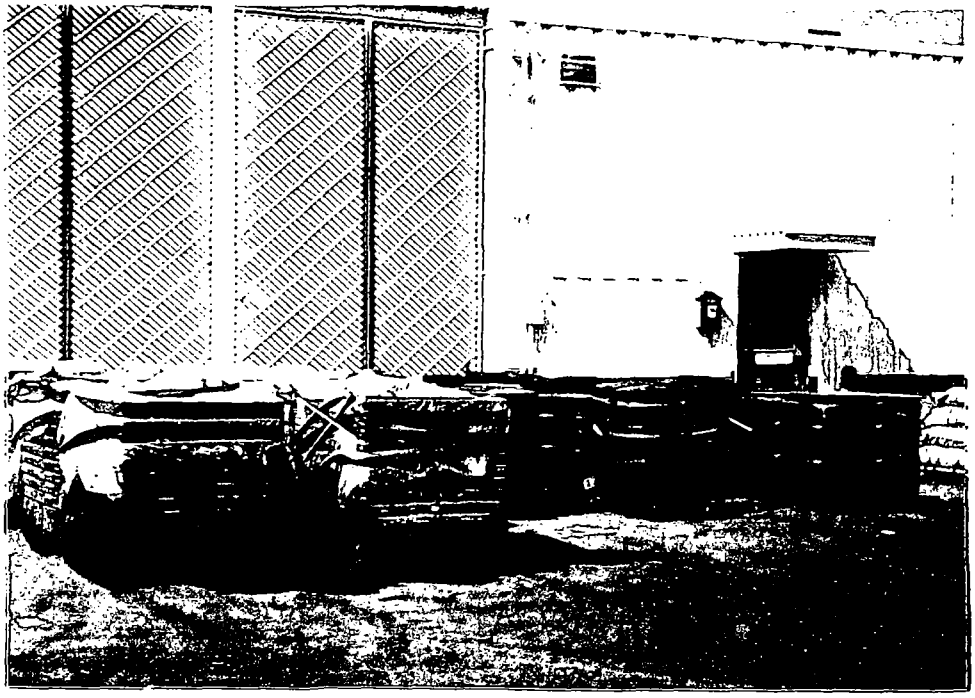
Photograph No. 4 Location: SWMU 5
Orientation: South Date: 03/26/92
Description: The Former Waste Oil Tank is located beneath the gravel in the foreground. Along the right edge of the photo is the concrete trench beneath the tank.



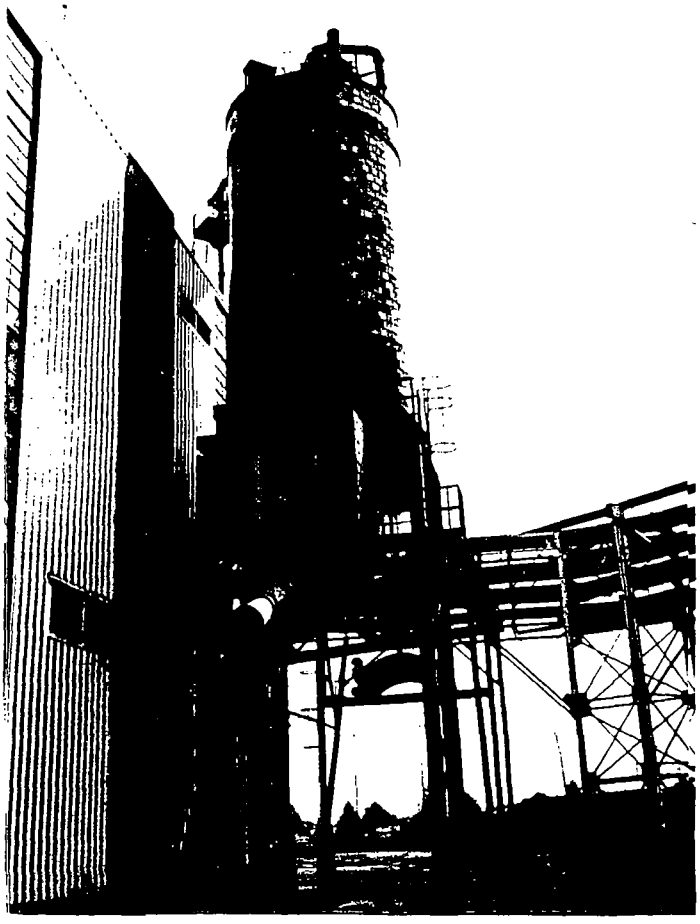
Photograph No. 5 — Location: SWMU 6
Orientation: East — Date: 03/26/92
Description: Photograph shows a Mobile Oil-Changing Carts (SWMU 6). Waste oil is being poured into the tank on the right. Clean oil is dispensed from the tank on the left.



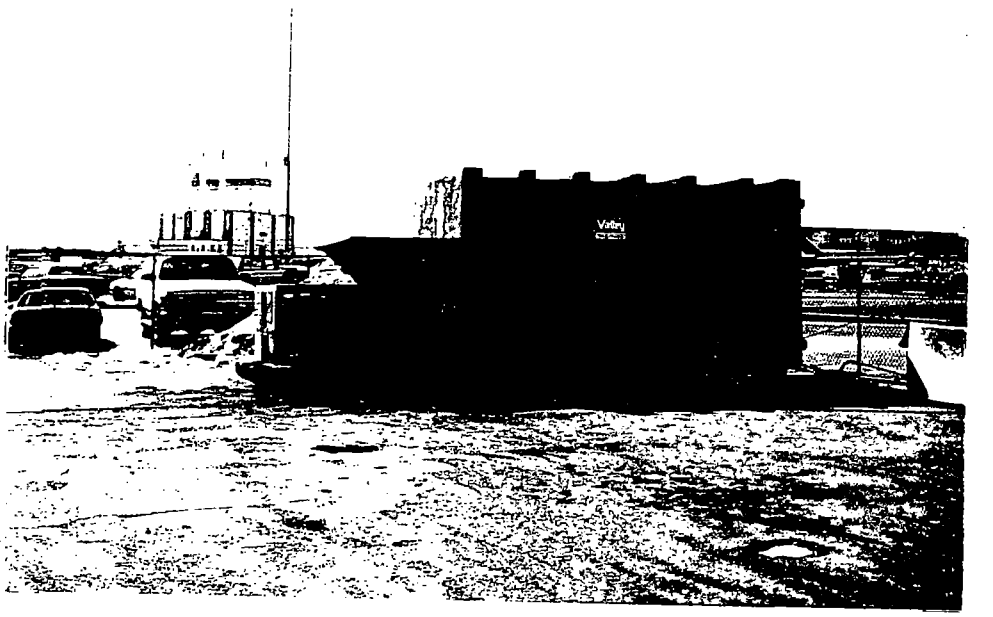
Photograph No. 6 — Location: SWMU 7
Orientation: West — Date: 03/26/92
Description: The Hazardous Waste Storage Building



Photograph No. 7 — Location: SWMU 8, SWMU 12
Orientation: West — Date: 03/26/92
Description: The Former Hazardous Waste Storage Building (SWMU 8) is shown in the background on the left. Containerized Soil and Water (SWMU 12) in totes and drums are shown in the foreground.

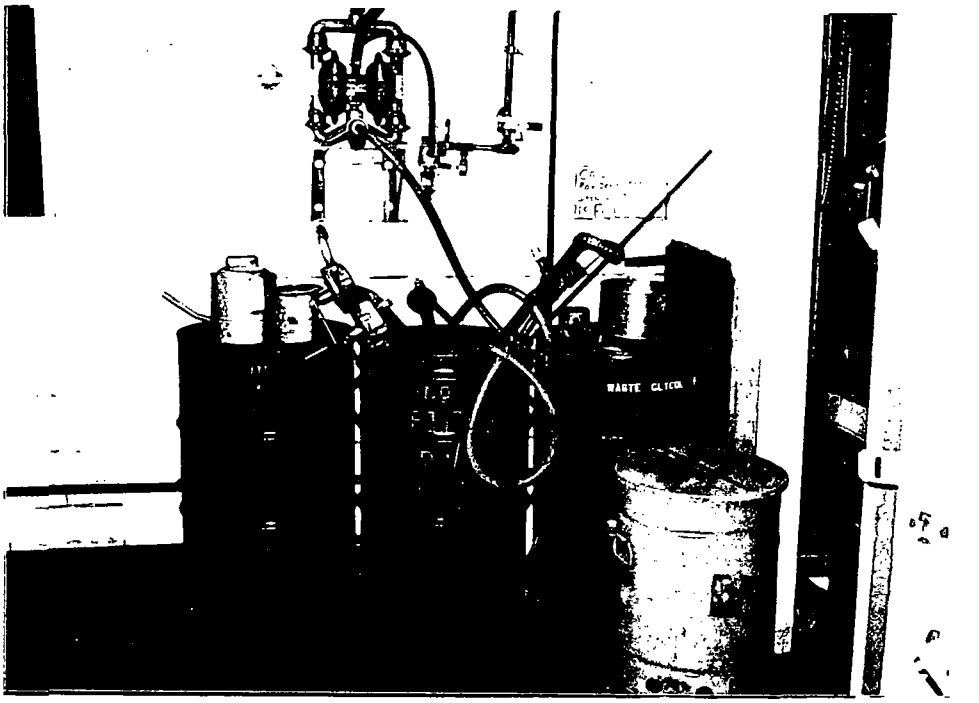


Photograph No. 8 — Location: SWMU 9
Orientation: South — Date: 03/26/92
Description: Powerhouse Flyash Hopper



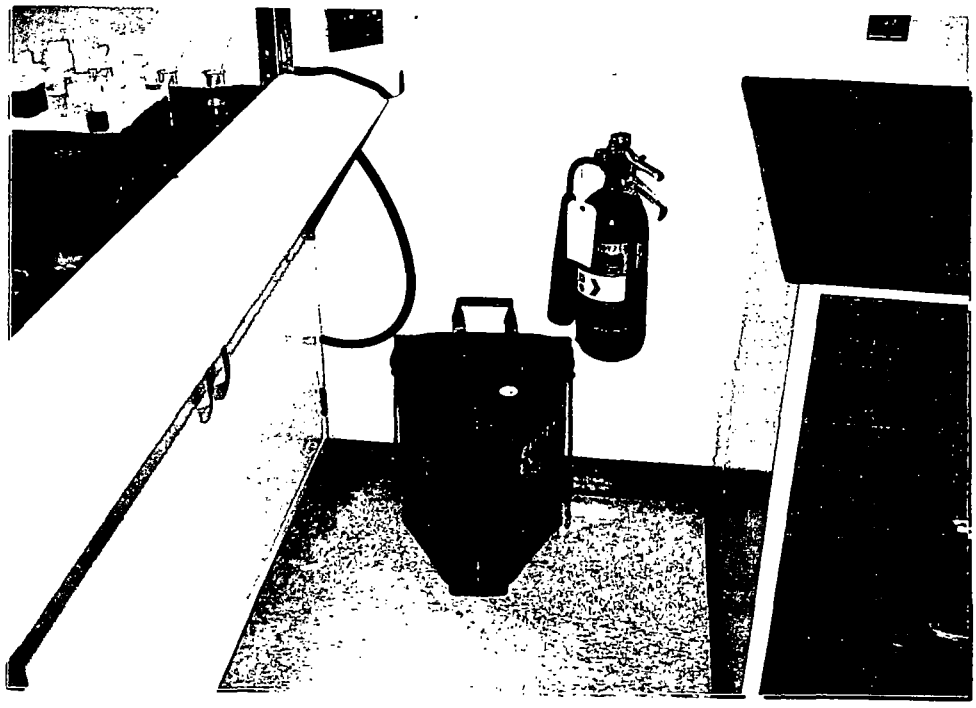
Photograph No. 9
Orientation: South
Description: Trash compactor; the powerhouse is shown in the background.

Location:
Date: 03/26/92



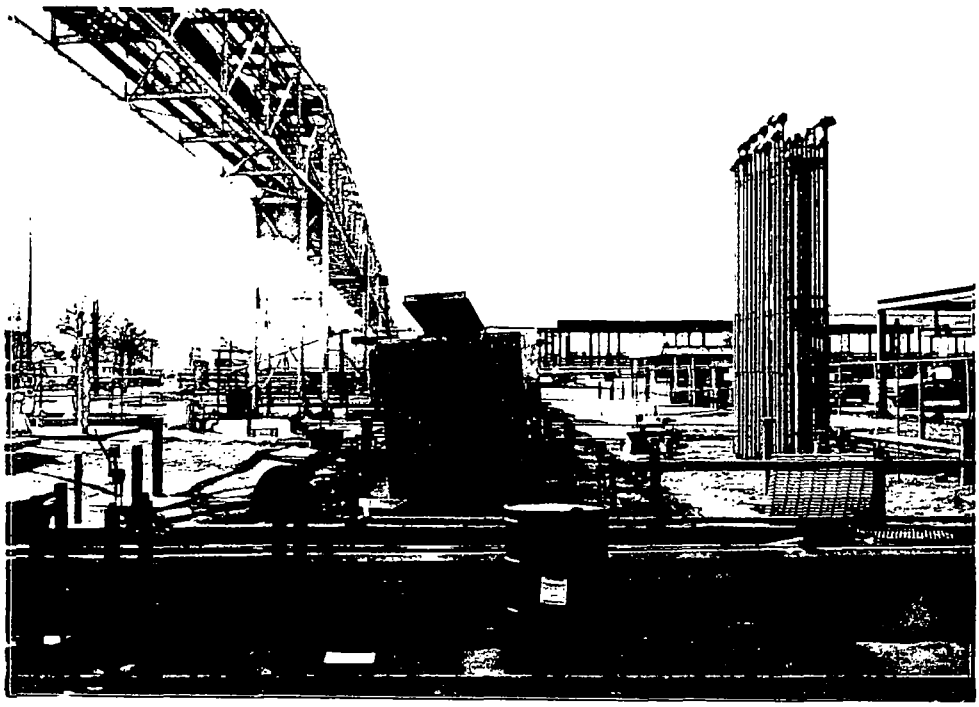
Photograph No. 10
Orientation: West
Description: Drums from left to right: Slix fire retardant, equipment for pumping oil to waste oil tank, waste glycol satellite accumulation area (SAA), covered container for dirty rags; the pump to the Waste Oil Tank (SWMU 4) is on the wall.

Location: SWMU 10
Date: 03/26/92



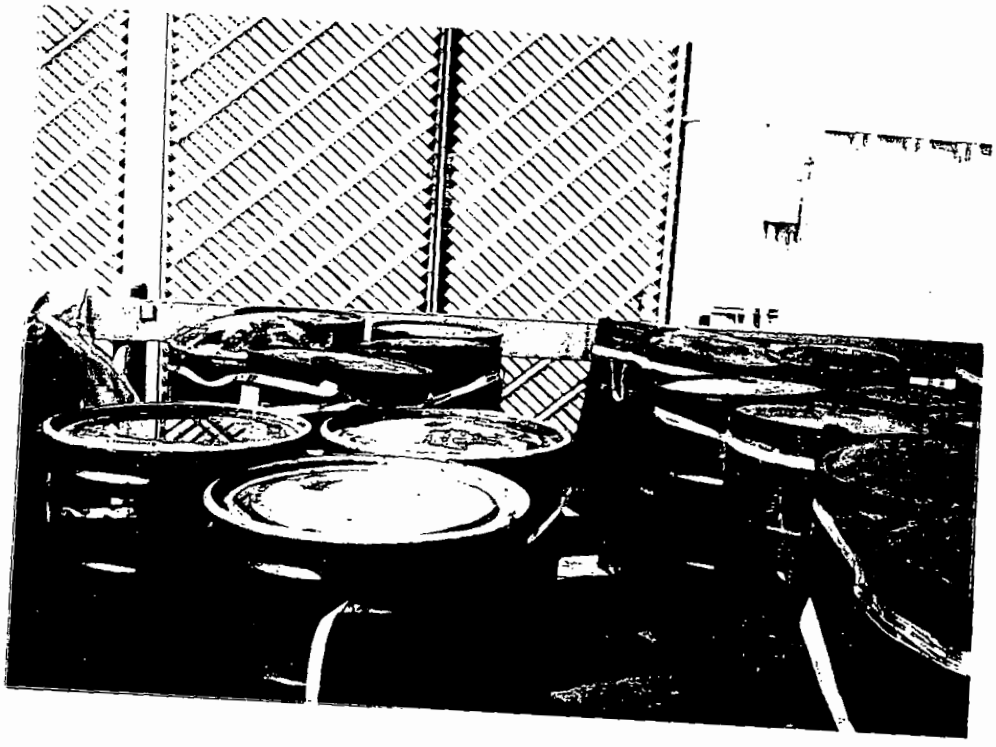
Photograph No. 11
Orientation: West
Description: Typical Laboratory Waste SAA

Location: SWMU 11
Date: 03/25/92



Photograph No. 12
Orientation: South
Description: The Former Fuel Tank Farm (AOC 1) is shown in the background. The Tank Bottom Drum (SWMU 13) is shown in the foreground. The roofed structure in the far background is the new fuel tank farm.

Location: AOC 1
Date: 03/26/92



Photograph No. 13
Orientation: West
Location: SWMU 12
Date: 03/26/92
Description: Photograph shows closeup view of containerized soil and water. Note rusting and bulging drums.

ATTACHMENT B

VISUAL SITE INSPECTION FIELD NOTES

(70) Thursday March 26, 1992

AC Rochester, Davison Engineering

Time Arrive: 0745

Time Depart: 1320

Weather Conditions: Foggy ~32°F

Interview Start Time: 0800

Interview End Time: 0945

Persons Present	Affiliation
Jeff Swano	PRC
Stan Labunski	PRC
Tom Caltrider	AC Rochester
Ron Neahusan	AC Rochester
C.R. Wendel	AC Rochester
Pier Pollini	AC Rochester
Hank Sullivan	AC Rochester
Richard Hufbler	AC Rochester

→ 3/26/92

3/26/92

(71)

Interview Discussion:

AC Provided us with 2 folders of Information

Engineering Complex has a Power House with 5 steam boiler (coal fired) & 1 gas powered.

Work 7 days/week w/ 3 shifts/day.

Received handout "Generator Waste Streams" Used manifests & the biennial Report.

RCRA status: LQG

Stan Requests the latest revised closure plan from 8/89

Only 3 reported incidents since they've been keeping track. All 3

Swano 3/26/92

(72)

incident reports have been supplied to us.

New tank farm installed completed 12/13/91 & operational 1/6/92

Spill from 4/23/90. A low concentration waste would have gone to a land fill. If high it would have gone to incinerator

Sodium's very

This is their procedure.

Richfield Disposal is a Class II landfill. Local health department approves it. Anything going out now is TCLP tested.

Richfield is closed pending a permit problem

Today, Class II wastes go to Venice Park Development in ~~Venice Park~~ Vernon, MI. JS 3/26/92

Requesting to review the draft PA/VSI to check terminology. Then they make comments and send them back.

New Fuel Farm area.

We are discussing the handouts they have provided. Those handouts are very descriptive and my notes are written on them.

Susan 3/26/92

(73)

Susan 3/26/92

WWTP ⇒ is under a different MID number. Solids are generated. F006 wastes are generated because it is commingled with a plating operations.

RCRA regulated ⇒ old waste fuel tank + drum storage facility (pad)

Production processes are none.

Cooling water, car wash, steam room, + facility water supplied by City of Flint distribution

Original benzene wastes went to Envirosafe LF in Oregon Oh. The 1983 spill pulled + replaced 6 tanks. A lot of soil was

Sivam 3/26/92

impacted. Soil removed + disposed at Envirosafe.

They think the source of GW Contam is from the original 1983 spills.

They do quarterly sampling. GW pulled as part of remediation + sent to TC's WWTP. Has nothing to do with closure. This has been going on since 1983 release.

A new system (upgraded 25 gals/min. pump) installed in 1990. This is to contain the plume, basically. New wells over 2200 ppb.

Sivam 3/26/92

Roy Donaldson will accompany us on the walkthrough.

Walk Through begins 1000.

1000 Materials & Chemical analysis labs. Most wastes are evaporated. Some go down sink & go to AC's WWTP. Chemicals that expire in their bottles goes to haz waste storage bldg.

Approximately 20 labs in this area. Actually, the whole complex is a lab with many little labs.

Swann 3/26/92

There is one compactor for general trash. it goes to Venice Park every 2 days.

Approx. 10-12 covered waste buckets that receive wipe cloths, paper towels to clean up materials & classified by AC as paint-type waste. Goes to a drum & disposed as paint-related material. These are SAAs

Oil changing unit (Phase 3). Oil is emptied into it. Then the unit is rolled over to a waste oil tank.

new oil → waste oil

Swann 3/26/92

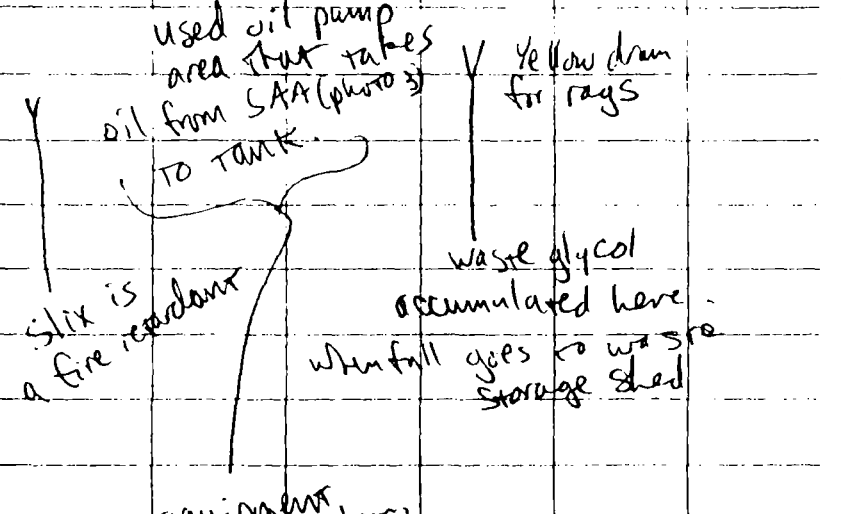
1020 Scrap metals, paper, + plastics are taken to recycling. GM corporate recycling team takes metals to Saginaw for recycling. Ship out every other day. Paper goes to Waldorf Corp in Battle Creek, MI every 2 weeks.

Plastic shipped out 1 per wk to Averill Plastics usually, but always on a bid process.

All recyclables stored centrally at the Dort Hwy complex.

Jivans 3/26/92

Photo #5



Jivans 3/26/92

Regular Trash is also collected in hopper dumpsters that are taken via forklift to the compactor.

Cardboard is baled & recycled out, every other week.

1047 found a waste drum that contains bottom crap from the fuel & waste fuel tanks by the old fuel tank farm. They are mixed in this drum. AC is awaiting sample results.

Fuel unloading station, diked & sound construction.

The new tank farm is beautiful at $1.5 million. Open, clean. Waste fuel tanks has its

Swaro 3/26/92

Photograph Log: Photographer J. Swaro Kodak 45A 400

Camera: Nikon Tele Touch 300 Film: 24 exp

#	Time	Dir	Subject
1	1000	W	SAA of towel wipes canister
2	1010	S	S-K PW.
3	1015	E	SAA oil changer
4	1020	N	Oil generated typically by engine testing.
5	1030	W	See pg 79.
6	1030	N	Tank UP #3 Foreground / Tank 54 oil trench
7	1043	SE	Old fuel tank farm awaiting Background is waste oil. metal box is a sump. wood spacers are covers to empty tanks
↓	↓	↓	↓
8	1050	S	Drum w/ waste fuel tank mud's
9	1055	S	Old waste oil tank being used as guide
10	1100	S	waste fuel tank New
11	1110	W	Haz waste Storage Bldg. Closed
12	1110	W	" open door
13	1135	S	compactor Powerhouse in BKGRD

Swaro 3/26/92

own bermed, concrete containment area.

1110 Haz waste storage bldg. Raised floor, heated + air conditioning. Trailer size building. Sprinkler system. Inadequate aisle space. "Accum start date 4/16/91" on one drum. Well signed. They are keeping haz and non-haz waste in here. 13 drums plus one open w/ trash. Also a waste toner container. Of these drums: 4 have waste Paraffin w/ Phenol. 3 EDM waste related. 2

Susan 3/26/92

waste product because it was discontinued (in plastic drums)

In the right section 6 drums, Thinner, Freon, 3 print related waste, + 1 EDM (electrostatic discharge machine - drills small cuts almost laser like, it creates very fine grindings) Always locked.

1130 waste drum storage building. Some empty some with waste water from decon of MW installation. + soil boring mat'ls. & tubes of soil. 30 drums TOTAL

Susan 3/26/92

on pallets. Some are bulging & one is busted open.
Some of the soil has been tested & approved & sent to Venice Park. These still here are awaiting TPST results.
Now the building part is labelled "Flamable Liquid Storage Building"
Some drums are labelled "Notice Contains Material for Disposal Pending Analysis".
Paint Product is stored in this building. Heated - Fully enclosed.

Jimmer 3/26/92

Photo log Cont'd

#	Time	Dir	Subject
14	1130	W	Drums & tarps cuts. &c. drum storage area
15	1130	W	Close-up of drums
16	1210	S	Hopper

Jimmer 3/26/92

In the former storage pad area, more product, raw matls are stored, in drums

Some PCB transformers, all located inside, are at the site.

Asbestos materials removed by various contractors, by bid, & they had dumpsters. Took out floor tile.

Transformer room, all enclosed, labelled + Bermed. Concrete floor.

1200 Drive over to ~~Power~~ 3/26/92

Tavano 3/26/92

Power house. Fly ash is vacuumed into hopper when full, Truck comes in a chute is lowered + the hopper is emptied into truck. Truck goes to Venice Park. This is per Phil Parker. 6200 cu ft capacity Avg, emptied 1ce per week. Sometimes during Summer it is not used. All depends on amt of coal used.

1215 Depart Power House for Tom's office.

Tavano 3/26/92

National Asbestos Abatement has AC's blanket order for asbestos removal, Flint, MI.
MIS is another asbestos removal firm used in Saginaw, MI

West of Engineering is the Dort Highway Complex which assembles, constructs spark plugs + other parts.
East of it → The Averill St. Complex manufacturing automotive component parts.
South ~~West~~ JS 3/26/92 is the AC WWTP.
1245 file reviewing + photocopying
1320 Depart.

Jonah 3/26/92

Thursday April 23, 1992

Arrival Time: 0830
Departure Time:

Weather: Overcast. Slight drizzle 30°F slight breeze. Steering

Interview Start Time: 0850
Interview End Time:

Persons Present	Affiliation
Jeff Swano	PRC
Mike Keefe	PRC
Al Meadows	Boise Cascade